AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the Application. Claims 1, 2, 4, and 6 have been amended. Claim 12 has been added.

1. (Currently amended) A fluid bed granulation process comprising the steps of:

feeding granule seeds of a predetermined substance at a controlled temperature into a granulation fluid bed, at the same time as a flow of an appropriate growth substance in liquid state;

removing the finished hot granules from said granulation fluid bed;

cooling down said granules in a cooling fluid bed, wherein the cooling fluid bed is continuously formed and supported by a respective flow of fluidification air; and

reusing at least part of the fluidification air coming out from said cooling fluid bed of the finished granules by feeding it into the granulation fluid bed;[[.]]

wherein reusing said at least part of the fluidification air coming out from said cooling fluid bed of the finished granules and fed into the granulation fluid bed is used as fluidification air of said granulation fluid bed.

2. (Currently amended) The fluid bed granulation process according to claim 1, wherein all of the fluidification air fed into the granulation bed comes from the cooling bed as pre-heated fluidication air to reduce both the total air consumption and total energy consumption required to complete the fluid bed granulation process.

3. (Previously presented) The fluid bed granulation process according to claim 1, wherein substantially all of the fluidification air coming out from the cooling bed is used as fluidification air for said granulation bed.

4. (Currently amended) [[A]] The fluid bed granulation process according to claim 1, ~~of a predetermined substance at controlled temperature through growth of granule seeds of such a substance, fed into a granulation fluid bed, at the same time with a flow of an appropriate growth substance in liquid state, comprising a step of cooling finished hot granules in a respective cooling fluid bed, using one~~ wherein all the fluidification air coming out from said cooling fluid bed is fed into the granulation fluid bed so that a single flow of fluidification air is used to continuously form and support, in order, said cooling and granulation fluid beds substantially arranged in series with respect to said ~~single~~ flow of fluidification air.

5. (Previously presented) The fluid bed granulation process according to claim 4, wherein the finished granules of said substance are transferred substantially in a cascade to said cooling fluid bed.

6. (Currently amended) An apparatus for carrying out the fluid bed granulation process at controlled temperature of claim 4, comprising:

a self-supporting structure substantially shaped like a container, defining a granulation space inside of it, in which a shelf is positioned, intended to support a granulation fluid bed;

a further base plate in said space, positioned below and in a predetermined distanced relationship from said shelf, said base plate being intended to support a respective cooling fluid bed of hot finished granules coming from said granulation bed, said cooling bed being positioned below said granulation bed and in fluid communication with said granulation bed through said shelf, provided perforated, grated or in any case permeable to gas flows;

a downcomer, extending vertically in said space, suitable for the transfer of finished granules from said granulation fluid bed to said cooling fluid bed at said further base plate; and

~~means for~~ a feeding opening and a distribution chamber feeding and distributing fluidification air in said space below said further base plate, to form and maintain said cooling bed and said granulation bed, which are arranged in series with respect to said flow.

7. (Previously presented) The apparatus according to claim 6, wherein said downcomer comprises a vertical panel, supported in said space in a predetermined spaced relationship from a wall of said container structure, defining with it an interspace, said panel having a horizontal bottom side spaced from said further base plate, so as to define with it a passage, suitable for putting said interspace in communication with the space above the aforementioned base plate.

8. (Previously presented) The apparatus according to claim 7, wherein said interspace is in communication at the top with said space, through an opening provided in it.

9. (Previously presented) The apparatus according to claim 6, wherein said cooling fluid bed is in communication with the outside through a pocket comprised between a wall of said container structure and a front panel fixed to the base plate supporting the cooling bed.

10. (Previously presented) The apparatus according to claim 9, wherein said front panel comprises a mobile bulkhead, adjustable in height.

11. (Previously presented) The apparatus according to claim 9, wherein said front panel is parallel to said top wall.

12. (New) The apparatus according to claim 10, wherein a height of said front panel determines an average permanency time of the hot finished granules in a cooling zone and, consequently, determines both a temperature of finished granules discharged from the apparatus and a preheating temperature of the fluidification air.